REMARKS

Amendments

Claim 1 is amended to incorporate the recitations of claims 40 and 41. Claims 18, 38-41, and 44 are cancelled. In addition, the claims and specification are amended to eliminate the objections presented in the Office Action of February 13, 2009.

Objection to the Specification

The objection refers to the proper language and format for the Abstract. Applicants' abstract does not exceed 150 words, and the language is sufficiently clear. Since no specific objection was made with regards to the Abstract, the Abstract is not being amended at this time.

The specification is amended to address the Examiner's specific comments with regards to trademarks, bacteria names, and antibiotic names. Upon indication of allowable subject matter, applicants will further review the specification to determine if there are any additional trademarks, bacteria names, and antibiotic names to be corrected.

Objection to the Claims

The claims are amended above to eliminate most of the minor objections regarding claim language noted by the Examiner. However, applicants have decided not to amend the term "obtainable" as suggested, as this language is not objectionable and is readily understood by one of ordinary skill in the art.

Rejection under 35 USC § 112, second paragraph

This rejection is rendered moot by the cancellation of claims 38-40. Further, it is noted that claim 1 refers to silver oxide rather than the "antimicrobial compound." Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC § 103(a) in view of Seo et al., Abe et al., Bagala, Iler et al., and Galinsky et al.

Claims 1-3, 6-19, 24, and 33-44 are rejected as allegedly being obvious in view of Seo et al. (US 6,030,627), in combination with Abe et al. (US 4,375,373), Bagala et al. (US

7,045,007), Iler et al. (US 2,885,366), and the excerpt by Galinsky et al. This rejection is respectfully traversed.

As discussed previously, Seo et al. (US '627) disclose an antimicrobial pigment obtained by preparing an amorphous glassy coating layer of metal oxides on the surface of a cosmetic pigment and then intercalating antimicrobial silver, copper, or zinc in the lattice structure of the amorphous glassy coating layer. See, e.g., column 3, lines 16-26. See also the discussion of EP 0 665 004 at page 1, line 25 – page 2, line 2 of applicants' specification.

To intercalate the silver, copper, or zinc into the lattice structure of metal oxide amorphous glassy coating layer, the antimicrobial metals can be added during the dry milling or heating steps used to form the metal oxide coating layer. Alternatively, the antimicrobial metals are added in the form of aqueous salt during the wet milling step. See column 7, lines 10-23. Intercalation is achieved by roasting and/or sintering at high temperatures, for example 300- 1200°C. See column 7, line 26, column 7, line 34, column 7, lines 55-56, and column 8, lines 4-6. See also the Examples.

The rejection also refers to an excerpt of Seo et al. See page 9 of the Office Action. It is noted, however, that the rejection no longer relies on the previously cited article by Seo et al. from Cosmetics and Toiletries.

In any event, Seo et al. do not disclose or suggest obtaining an antimicrobial inorganic pigment by agitating a suspension comprising one or more inorganic pigments and silver oxide. Moreover, in light of the required roasting/sintering, the Seo et al. process does not disclose or suggest preparing antimicrobial pigment particles with silver oxide at a temperature of 10 - 60°C. This is acknowledged in the rejection.

The rejection relies on the disclosure Abe et al. (US 4,375,373). Abe et al. disclose inorganic pigments which comprise particles that are covered with a continuous layer of fine amorphous silica. The coating is formed by depositing particles of active silica sol on the surface of the pigment. This is followed by dehydration. See column 3, lines 36-41. However, Abe et al. provide no teaching or suggestion with respect to the inclusion of an antimicrobial compound such as silver oxide in the pigment or the amorphous silica coating.

It is noted that Abe et al. teach elemental metal powder pigments, such as silver, and inorganic pigments such as zinc oxide and titanium dioxide. See column 4, lines 15-22. These materials, however, serve as the cores of the pigment particles which are to be coated by the disclosed process.

The rejection refers to a disclosure by Abe et al. of heating a slurry to a temperature of 60-250 °C for 1-5 hours. However, this disclosure relates to how to provide a uniform dispersion of the pigment particles prior to being coated with the amorphous silica coating.

Thus, like Seo et al., Abe et al. also do **not** disclose or suggest obtaining an antimicrobial inorganic pigment by agitating a suspension comprising one or more inorganic pigments and silver oxide at a temperature of 10 - 60°C.

The rejection asserts that it would be obvious to modify the process of Seo et al. to mix, i.e., agitate, a suspension of pigment particles, metal oxides for formation of an amorphous glassy coating layer on the surface of the pigment particles, and silver oxide at a temperature of 60°C for 1-5 hours, in light of the disclosure of Abe et al. However, no such suggestion is presented by Abe et al. The process described by Abe et al. of heating a suspension to at a temperature of 10 - 60°C occurs **before** the pigment is coated with an amorphous silica coating. The temperature range of 10 - 60°C does not relate to any coating step. **More importantly, this heating step does not relate to coating any material with silver oxide.**

The rejection acknowledges that both Seo et al. and Abe et al. do not disclose the ranges of Hunter model L, a and b values recited in the claim 1. It is asserted that it would be obvious to optimize such values. However, the rejection is devoid of any suggestion as to why one should seek to optimize these values for an antimicrobial pigment, or that such optimization would arrive at the ranges recited in the claims, as opposed to other ranges.

The excerpt by Galinsky et al. provides no suggestion of modifying the process described by Seo et al. Galinsky et al. relates to drug therapy, not antimicrobial pigments.

Bagala is relied on in the rejection for disclosing the use of mica as a substrate for pigment particles. Bagala discloses an effect pigment made from a mixture of coated laminar platelets, wherein the platelets are a mixture of different materials, such as glass and mica. However, as with the other cited references, Bagala does **not** disclose or suggest obtaining an antimicrobial inorganic pigment by agitating a suspension comprising one or more inorganic pigments and silver oxide at a temperature of 10 - 60°C.

Iler et al. (US 2,885,366) disclose a product comprising a solid core material, not made of silica, and a skin of amorphous silica. The core can be made of a variety of materials including forms of mica, metal oxides, metal silicates, kaolin, fibreglass, rockwool, cellulose, and nylon. See, e.g., column 2, line 62 – column 3, line 61.

The skin is made of amorphous silica which is dense, which means that the skin is not porous. See column 4, lines 31-44. The skin is applied to the core by suspending the core in water, adding active silica, and maintaining a pH between 8 and 11. See column 6, lines 45-53.

In the rejection, it is stated that the disclosure of Iler et al. is relied on to show that products with an amorphous silica coating tend to form a shape in accordance with the shapes recited in applicants' claim 6, particularly a spherical shape. However, this is not what Iler et al. disclose. Instead, Iler et al. disclose that their products tend to form the shape of the original core material. See column 1, lines 17-20, and lines 65-67. See also Figures 1-3 wherein the cores are in the shapes of a sphere, a fiber, and a plate, respectively, and the resultant products are in the shapes of a sphere, a fiber, and a plate, respectively.

In any event, Iler et al. provide no disclosure regarding antimicrobial pigments, as is acknowledged in the rejection. As with the other cited references, Iler et al. do **not** disclose or suggest obtaining an antimicrobial inorganic pigment by agitating a suspension comprising one or more inorganic pigments and silver oxide at a temperature of 10 - 60°C.

Additionally, none of the references suggest that one can obtain a product with excellent antimicrobial activity over a long period of time with an amount of silver oxide that is relatively low (0.01 to 0.5% by weight, based on the total weight of the inorganic pigment) without requiring intercalation of the silver ions. See the discussion of the "Anti-microbial investigations" beginning at page 100 of applicants' specification.

In view of the above remarks, it is respectfully submitted that the disclosure of Seo et al. (US '627), taken alone or in combination with Abe et al., Bagala et al., Iler et al., and Galinsky et al., fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC § 103(a) in view of Seo et al., Abe et al., Bagala et al., Iler et al., Galinsky et al., Vollhardt, Scott et al., Hashim, and De Tommaso

Claims 4, 5, and 20-28 are rejected as allegedly being obvious in view of Seo et al. (US 6,030,627), in combination with Abe et al. (US 4,375,373), Bagala et al. (US 7,045,007), Iler et al. (US 2,885,366), the excerpt by Galinsky et al., Vollhardt (US 6,274,124), Scott et al. (US 6,482,397), Hashim, and De Tommaso (WO 2002/04212). This rejection is respectfully traversed.

Seo et al. (US 6,030,627), Abe et al. (US 4,375,373), Bagala et al. (US 7,045,007), Iler et al. (US 2,885,366), and the excerpt by Galinsky et al. are discussed above.

As discussed in the Reply filed November 10, 2008, Vollhardt, Scott et al., and De Tommaso provide no suggestion to modify the process for making antimicrobial inorganic pigment, as described by Seo et al., so as to arrive at a pigment in accordance with applicants' claimed invention.

The newly cited Hashim article also fails to suggest modifying the process for making antimicrobial inorganic pigment described by Seo et al. in such a manner as to arrive at a pigment in accordance with applicants' claimed invention. Hashim merely discloses that cosmetic products can contain nutrients that support microbial growth.

In general, none of the cited references disclose or suggest obtaining an antimicrobial inorganic pigment by agitating a suspension comprising one or more inorganic pigments and silver oxide at a temperature of 10 - 60°C.

In view of the above remarks, it is respectfully submitted that the disclosure of Seo et al. (US '627), taken alone or in combination with Abe et al., Bagala et al., Iler et al., Galinsky et al., Vollhardt, Scott et al., Hashim and De Tommaso fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Obviousness-type Double Patenting Rejection in view of 10/553,668 and Park et al.

Claims 1, 3, 6-13, 18, 34, and 38-42 are rejected as being obvious in view of claims 1-16 of Serial No. 10/553,668 in combination with Park et al. (US 6,372,236).

Filed herewith is a terminal disclaimer with respect to Serial No. 10/553,668. Submission of this Terminal Disclaimer is not to be construed as acquiescence to any ground of rejection.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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